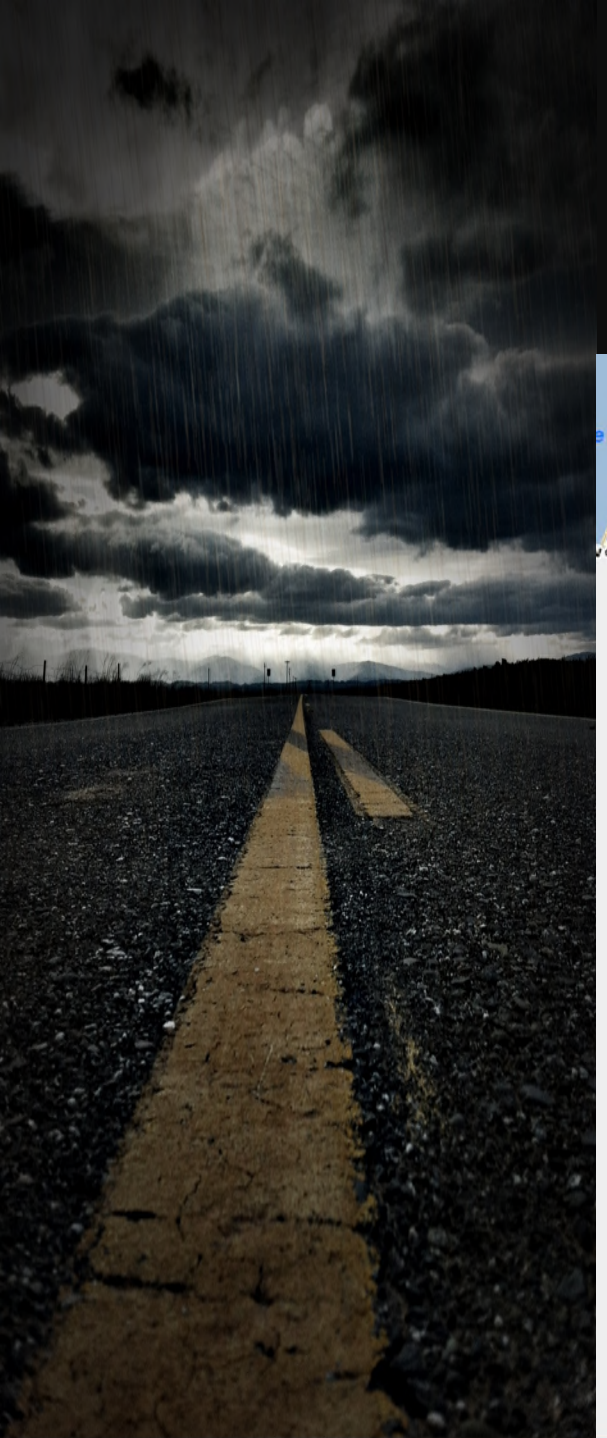
Complying with MDOT's Updated MS4 Permit

Municipal Separate Storm Sewer System (MS4)

- A conveyance or system of conveyances (including roads with drainage systems), owned or operated by the US, a state, city, town, district, or other public body that discharges to a waters of the US or waters of the state or used for collecting or conveying stormwater.

- Intent of permit is to improve waters of the state for designated uses including recreation, protection and propagation of wildlife, agricultural, industrial, and navigational purposes.



How big is MDOT's MS4?

- Over 9,600 miles of roads
- Rural sections include ditches on both sides of roads
- Urban sections have enclosed sewers
- Includes MDOT's properties
  - Drainage easements
  - Rest areas
  - Park and rides
  - Maintenance Facilities
  - Stormwater BMP areas

Stormwater Management Program (SMP)

6 Minimum Measures

- Public education and outreach
- Public participation
- Illicit discharge elimination program (IDEP)
- Construction stormwater runoff control
- Post-construction stormwater runoff control
- Good housekeeping

What Triggers MS4 Review?

- Discharge to WOS or other MS4 system
- Earth disturbance > 1 acre
  - Actions taken to alter the existing vegetation and/or underlying soil of a site such as clearing, grading, site preparation (e.g., excavating, cutting, and filling) soil compaction, and movement and stockpiling of topsoil
    - Doesn’t distinguish between temporary and permanent disturbances
    - Expect 95% of projects to hit this trigger
    - Earth disturbance does not mean post construction BMPs are required
- Project in watershed with Total Maximum Daily Load (TMDL)
  - Specific watershed TMDLs found in SMP
  - A listed TMDL triggers MS4 review regardless of earth disturbance

Changes from Previous MS4 Permit

- Addition of water quality (WQ) and channel protection (CP) standards
  - Primarily treated using structural post-construction best management practices (PC-BMPs) but can be treated using operational BMPs in some cases.

- Must notify EGLE when creating new outfalls to a water of the state and points of discharge to municipal treatment systems.

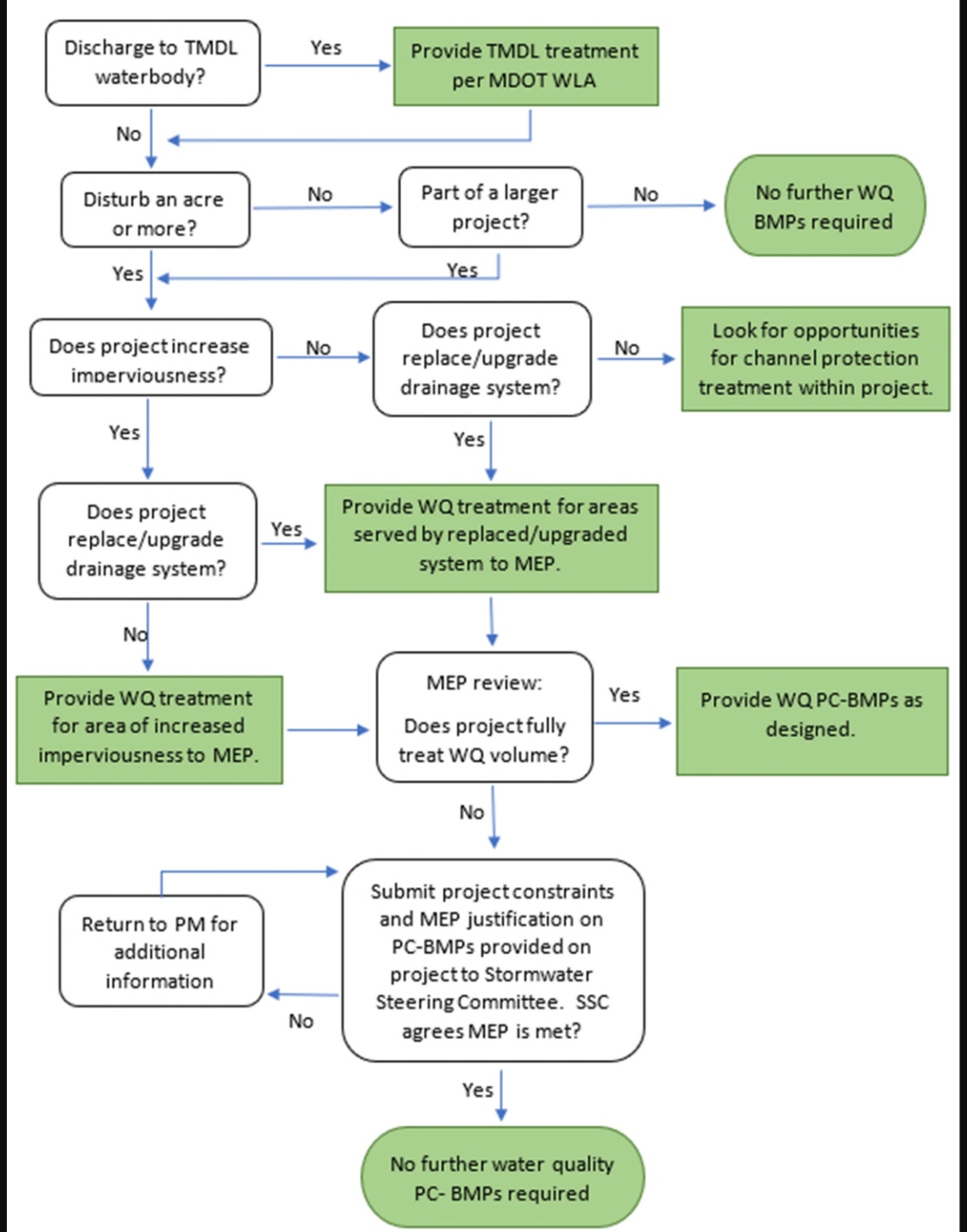
Water quality – Think sediment removal and/or TMDL treatment

- **Design event**: 90% non-exceedance storm (.77” - 1.0” for state)
- **Goal** is to achieve 80% sediment removal
- Treated through vegetated ditches/swales, hydrodynamic separators, deep sumps, rain gardens
- BMPs have different removal efficiencies

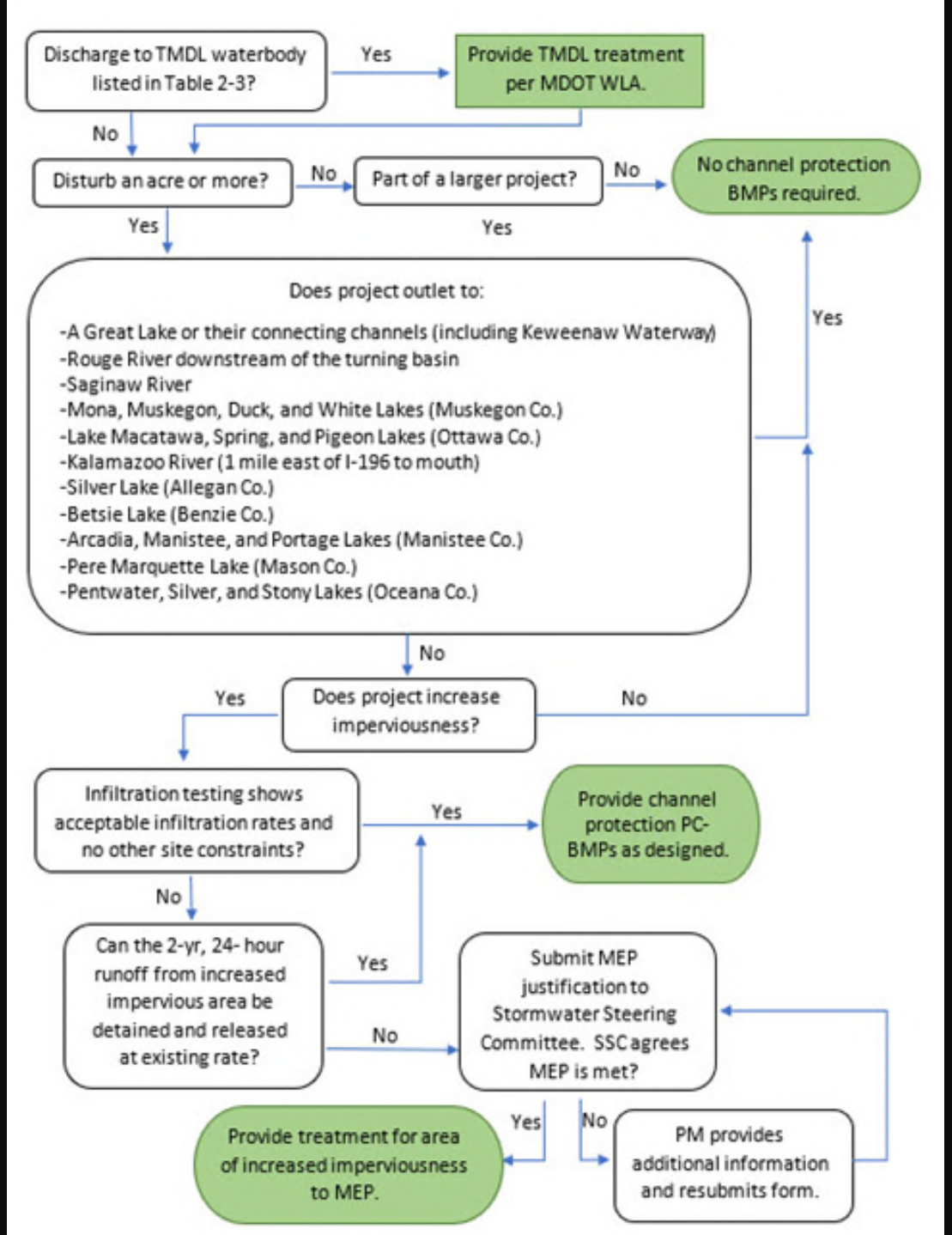
Channel protection- Think infiltration and detention of increased runoff

- **Design event**: 2-year, 24-hour storm (2.1” – 2.5” for state)
- **Goal** is to infiltrate the additional runoff created by the project
- Treated only through infiltration or detention
  - Infiltration needs to be examined first – requires soil borings and infiltration testing

Water Quality Process



Channel Protection Process



Project Type	Area Water Quality Applies*	Area Channel Protection Applies
New road construction	Entire project to MEP	Entire project to MEP
Road reconstruction with no increase in impervious area (includes drainage reconstruction)	Entire project to MEP	NA
Road reconstruction / resurfacing within existing footprint (excludes drainage work except for minor drainage adjustments)	NA	NA
Road reconstruction with additional impervious area added (excludes drainage work except for area of impervious change)	Provide treatment for area of increased imperviousness to MEP	Provide treatment for area of increased imperviousness to MEP
Road reconstruction with additional impervious area added (includes drainage reconstruction)	Entire project to MEP	Provide treatment for area of increased imperviousness to MEP
Crush and shape with no increase in impervious area or changes to drainage system	NA	NA
Stand-alone culvert replacement	NA	NA
Bridge replacement without a road project	NA	NA
Bridge replacement with corresponding road project	Provide treatment to MEP for bridge (see above for road requirements)	NA for bridge portion (see above for road requirements)
Capital Preventative Maintenance (CPM)[2] work	NA	NA
Safety projects where increased imperviousness is contained within existing outside edge of shoulder and no work in the ditch.**	NA	NA
Safety projects (combined with other funding templates) that increase imperviousness.	Provide treatment for area of increased imperviousness to MEP	Provide treatment for area of increased imperviousness to MEP

* Projects in established TMDL areas listed in Table 2-3 must provide treatment for the listed TMDL.

** Project must be entirely funded within the safety template and not combined with other funding sources. If other funding sources available, treat water quality to the MEP.

Project Type	Area Water Quality Applies*	Area Channel Protection Applies
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Crush and shape with no increase in		

Bridge replacement without a road project	NA	NA
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* Projects in established TMDL areas listed in Table 2-3 must provide treatment for the listed TMDL.

** Project must be entirely funded within the safety template and not combined with other funding sources. If other funding sources available, treat water quality to the MEP.

Maximum Extent Practicable (MEP) Process

- Can be used for either WQ or CP
- Reviewed by multi-disciplinary Stormwater Steering Committee
  - Include review time in schedule
- Must detail what treatment will be provided
- Must detail reasoning for not including BMP
  - Cost not a valid reason
- Projects going MEP need approval prior to env. certification

Project Management/Classification/MS4

“Informed Compliance” with permit

Proposed BMPs have been checked for viability

- Know what’s practical and what’s not (and why)

PC-BMP screening tool helps

- Know which areas to investigate

Verify Geotech early

- Adjust Geotech tasks on Planisware timeline or include EPE phase

MS4 Challenges

- Scoping, Scoping, Scoping
- Site conditions/restrictions
- Environmental classification/certification
- Innovative project delivery methods
- In-house review vs prequalified consultants
- How BMPs perform during major events, especially channel protection BMPs

Resources

Post-Construction BMP - Scoping Level Planning Tool

Does your project need BMPs?

Total Disturbed Area	80	acres
Is there a TMDL on the project? (Refer to the stormwater mapping tool)	No	
	CONTINUE	

Project Summary

This section to provide general housekeeping notes for the project.

Project Name:	INSERT PROJECT DETAILS
Location:	INSERT PROJECT DETAILS
Date:	INSERT PROJECT DETAILS
Watershed:	INSERT PROJECT DETAILS
Additional Notes:	INSERT PROJECT DETAILS

Site Characteristics

This section asks the user to input characteristics about the site in Column C. For guidance, refer to comments in cells in Column B.

Project Area Within The Right of Way	40.0	acres
Proposed Impervious Area	30.0	acres
Existing Impervious Area	10.0	acres
New Impervious Area (Treatment Area)	20.0	acres
Are there existing structural BMPs onsite that will be utilized on this project?	No	
Hydrologic Soil Group (Refer to the stormwater mapping tool)	A/B	
Urban or Rural?	Urban	

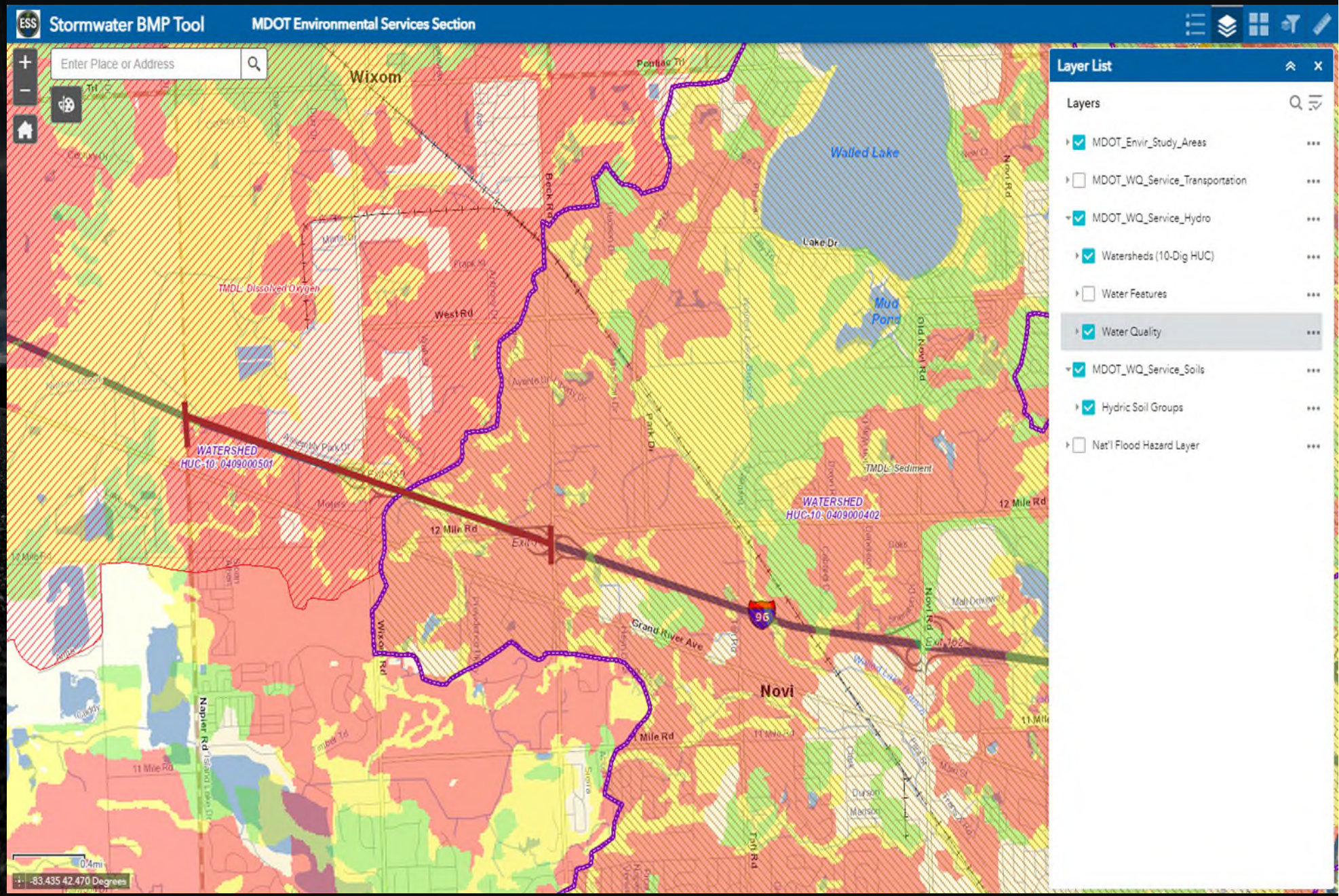
Water Quality Requirements

This section asks the user to input the water quality requirements the project must meet. Water quality requirements based on outfall/stream impairments. Refer to the stormwater mapping tool.

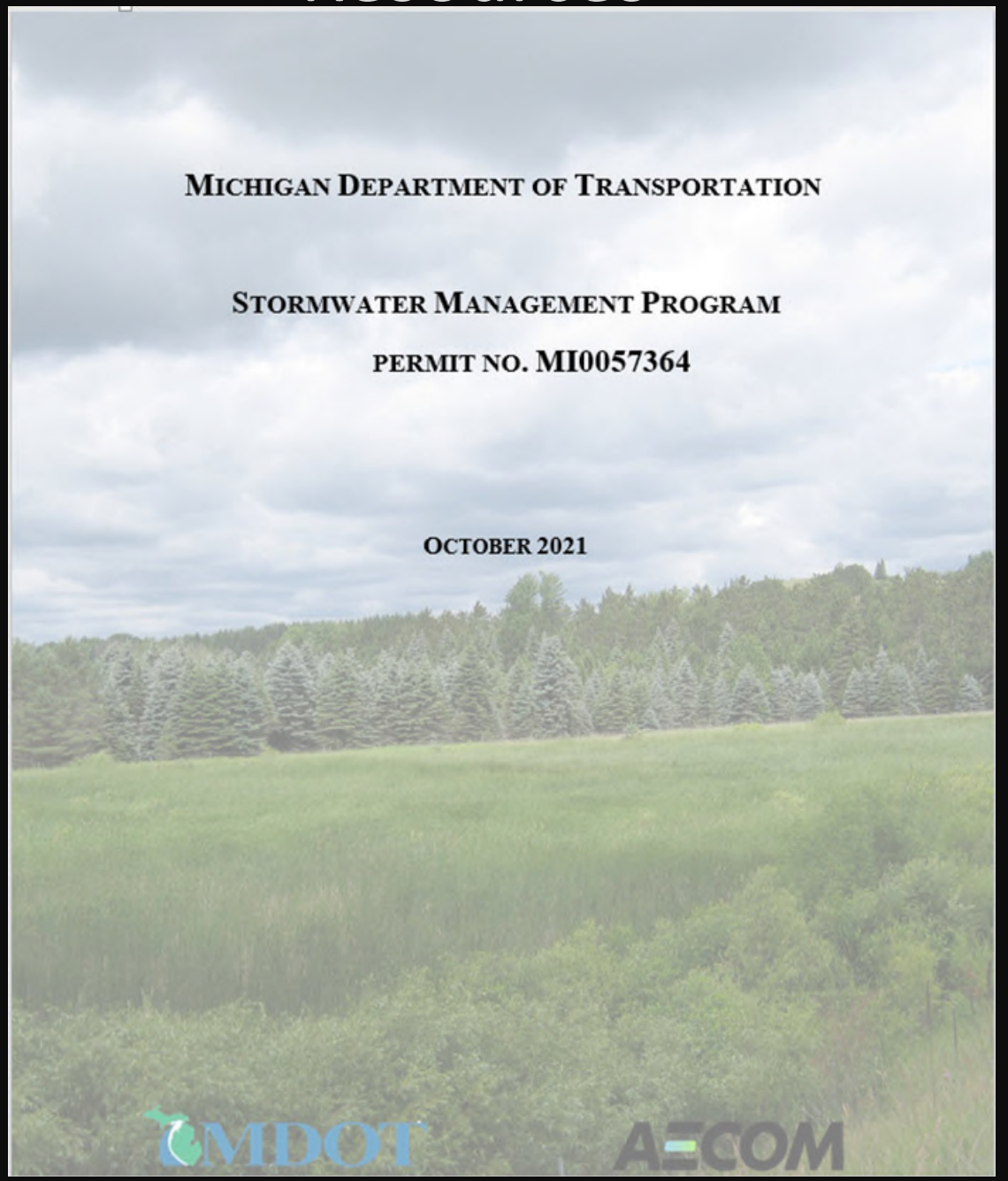
TSS removal	Yes
Metals	No
Total Phosphorus	No
Total Nitrogen	No

Introduction | Project Inputs | Ouput Summary | BMP Lookup

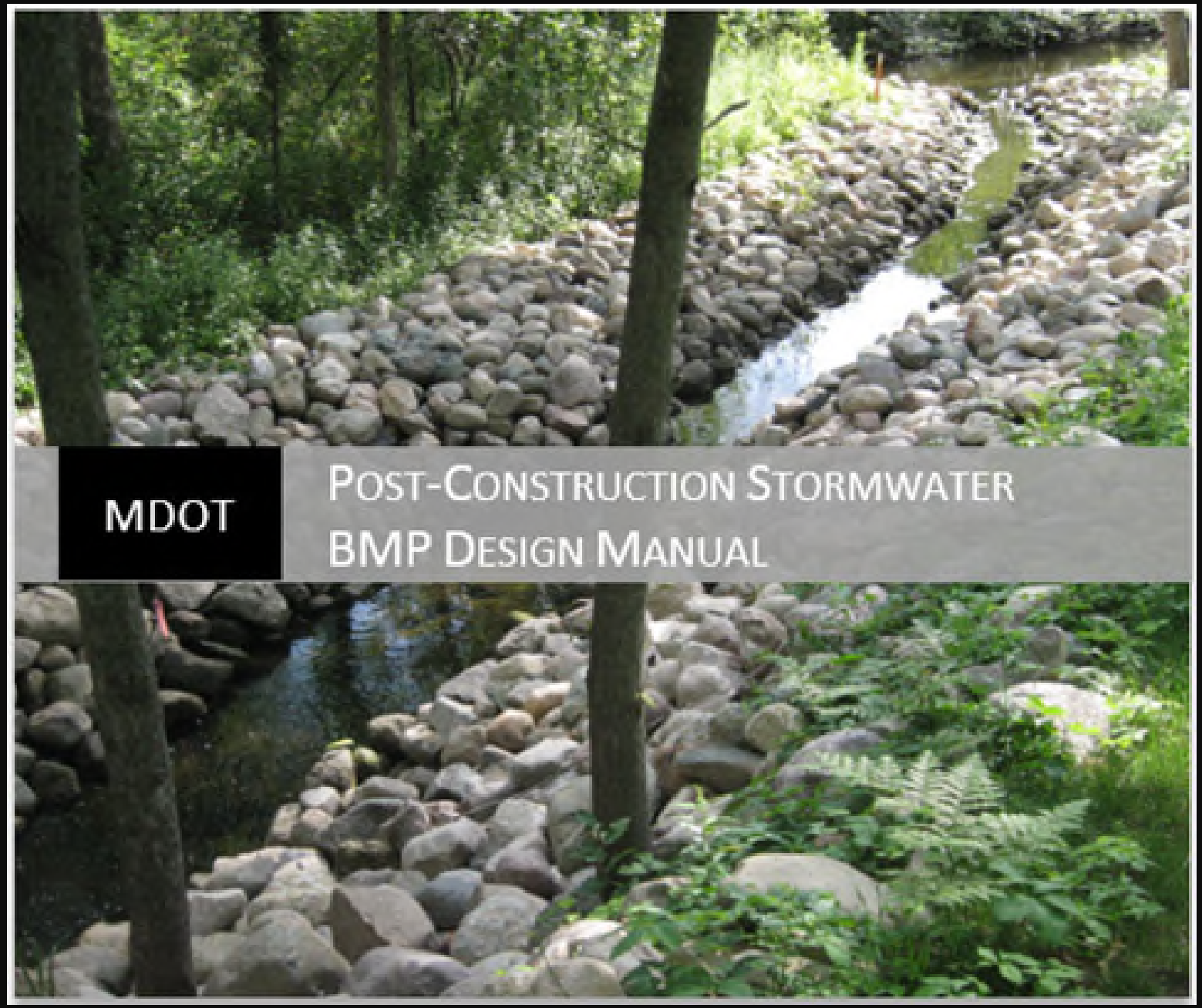
Resources


Stormwater BMP Tool
MDOT Environmental Services Section
Enter Place or Address
Wixom
Walled Lake
Lake Dr
Mud Pond
Old Novi Rd
West Rd
TMDL: Dissolved Oxygen
WATERSHED HUC-10: 0409000501
WATERSHED HUC-10: 0409000402
TMDL: Sediment
12 Mile Rd
Grand River Ave
Novi
Napier Rd
11 Mile Rd
Beck Rd
Wixom Rd
Novi Rd
Layer List
Layers
MDOT_Envir_Study_Areas
MDOT_WQ_Service_Transportation
MDOT_WQ_Service_Hydro
Watersheds (10-Dig HUC)
Water Features
Water Quality
MDOT_WQ_Service_Soils
Hydric Soil Groups
Nat'l Flood Hazard Layer
-83.435 42.470 Degrees

Resources


MICHIGAN DEPARTMENT OF TRANSPORTATION
STORMWATER MANAGEMENT PROGRAM
PERMIT NO. MI0057364
OCTOBER 2021
MDOT
AECOM

Resources



Resources

Clear Form

Michigan Department of Transportation 2650 (12/2021)

POST CONSTRUCTION STORMWATER TREATMENT MAXIMUM EXTENT PRACTICABLE (MEP) STATEMENT OF CONSTRAINTS

ROUTE	CONTROL SECTION/PRN	JOB NUMBER

PROJECTWISE link to plans

PROJECTWISE link to screening tool output

MEP requests submitted after environmental certification may result in project delays to restudy environmental impacts

Road Section	☐ Urban	☐ Rural	☐ N/A
If project not a road, describe			
Existing drainage system	☐ Enclosed	☐ Open Ditch	☐ Both
Proposed drainage system	☐ Enclosed	☐ Open Ditch	☐ Both
Does receiving water have a TMDL?	☐ Yes	☐ No	
Are TMDL requirements met?	☐ Yes	☐ No	☐ N/A

Water Quality – Treatment standard is to provide 80% sediment removal runoff from the 90% non-exceedance storm.

Does project meet water quality treatment goal? ☐ Yes ☐ No

Water quality treatment volume required: _____ Ft^3

Water quality treatment volume provided: _____ Ft^3

List water quality post construction best management practices (PC-BMPs) included as part of the project:

LIST WATER QUALITY PC-BMPs CONSIDERED BUT DETERMINED TO BE IMPRACTICABLE:

List all PC-BMP's considered for the project and the reason(s) for not including them as part of the project. Be as descriptive as possible.

Reasoning can include: PC-BMPs don't fit within existing R.O.W. and project scope does not otherwise require R.O.W., steep existing grades (slopes do not allow for storage or treatment), drainage improvements are not part of the project, obstructions within the R.O.W. (utilities, drainage, etc.), high water table, and/or other (describe).

Water Quality PC-BMP Considered	Reason(s) for Rejecting

Resources


ESS
Environmental Services Section
MDOT Bureau of Development
Stormwater Management Program
MS4 Training Module

Resources

SharePoint

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Stormwater Program

Potvin, Christopher (MDOT)
Environmental Field Services Engineer

Draft Stormwater Manual (July 2022)

Illicit Discharges / Connections

Stormwater Management Program

PC-BMP Screening Tool (2018)

Stormwater Steering Committee

The MDOT Stormwater Program maintains compliance with our National Pollutant Discharge Elimination System (NPDES) permit. This permit is Federally required and administered by EGLE. The goal of the NPDES program is to improve the quality of the water of the United States by utilizing the following 6 minimum control measures:

Education and outreach
Public involvement/participation
Post construction stormwater management
Construction stormwater runoff control
Pollution prevention/good housekeeping
Illicit discharge elimination

Stormwater Links

- Current construction projects
- MDOT Drainage Manual
- MDOT SESC Manual
- Construction Permit Manual
- Maintenance Garage Pollution Prevention Tips.pdf

Questions?